

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

1 We claim:

2 1. A process for imaging a lithographic printing plate having a presensitizing coating,
3 comprising the steps of:

4 a) blanket exposing said coating; and

5 b) imagewise applying an insolubilizing chemical to said coating.

6 2. The process of claim 1, further comprising the step of heating said coating.

7 3. The process of claim 1 wherein said coating comprises alkali soluble resins

8 4. The process of claim 3 wherein said alkali soluble resins comprise cresol-formaldehyde
9 resins.

10 5. The process of claim 1 wherein said coating comprises o-quinone diazide compounds.

11 6. The process of claim 1 wherein said insolubilizing chemical comprises amine functional
12 groups.

13 7. The process of claim 1 wherein the insolubilizing fluid has a pH greater than 7.5

14 8. The process of claim 1 wherein the insolubilizing chemical is selected from the group of:
15 amines and amine salts.

16 9. A method of using a printing press, employing working fluids in normal operation, to
17 develop a lithographic printing plate having a subtractive coating, comprising the steps of:

18 a) imagewise applying an insolubilizing chemical to said coating;

19 b) mounting said plate on said printing press; and

20 c) operating said printing press such that the unimaged areas of the coating are dissolved in the
21 working fluids.

22 10. A method according to claim 9 wherein said coating comprises acrylate monomers.

23 11. A method according to claim 10 wherein said coating also comprises photoinitiators.

12. The method of claim 9 wherein the insolubilizing chemical comprises amine functional groups.

13. The method of claim 9 wherein the insolubilizing chemical is selected from the group consisting of: amine salts, amines, or bases.

14. A method of imaging a lithographic printing plate having a developable coating comprising a decarboxylatable compound, comprising the step of:

applying imagewise to said coating a chemical which facilitates a decarboxylating reaction such that the imaged coating becomes insoluble to the developer.

15. A method of preparing a commercially available manufactured subtractive printing plate, for which the manufacturer or a sales representative has designated an associated commercially available developing solution, for press, comprising the steps of:

a) applying imagewise an insolubilizing chemical to said plate; and

b) developing said plate with said developing solution.

16. A method of imaging a lithographic printing plate having a coating comprising monomers and a photoinitiator, comprising the step of:

applying imagewise a co-synergist.

17. A method according to claim 15 wherein the decarboxylating chemical is selected from a group consisting of: amines, amine salts, acids, and bases.

18. A subtractive printing plate, comprising:

a) a substrate defining a surface;

b) on the surface, a coating comprising one or more chemicals selected from the group of:

acrylate monomers, epoxy resins, diazides, decarboxylatable carboxylic acids, and

photoinitiators; and

c) on said coating, an image covering less than the total coated area defining a chemical comprising an amine functional group.

19. A process for preparing for press a printing plate having a coating comprising epoxy resins, comprising the step of:

applying imagewise to said coating, a solution comprising an amine.

20. A computer to plate system, comprising:

(a) a print head containing a plurality of ink jet nozzles such that the print head is capable of jetting imagewise a solution,

(b) a printing plate having a coated surface comprising photosensitive compounds capable of being insolubilized by the solution,

(c) a heater capable of heating the printing plate, and

(c) a developer capable of dissolving the non-imaged coating.

21. A computer to plate system, comprising:

(a) an ink jet printer with a print head capable of imaging printing plates,

(b) an ink capable of insolubilizing a coating containing reaction products of photosensitive compounds,

(c) a printing plate having a coating comprising of reaction products of presensitized photosensitive coating.

22. A computer to plate system according to claim 20, wherein said coating contains sulfonic acid esters or amides of carboxylic acids.

23. The method according to claim 2, wherein the plate is baked to a temperature in the range of 149° C to 218° C.

1 24. The method according to claim 2, wherein the plate is baked to a temperature in the range of
2 149° C to 177° C.

3 25. A method of preparing a printing plate having a developable coating, comprising a resin and
4 a cross-linking agent, comprising the step of:
5 applying imagewise an insolubilizing chemical which when applied to the coating causes the
6 cross-linking agent to cross-link the resin.

7 26. The process of claim 25 where said cross-linking agent is 4,4'-
8 bismethoxymethyldiphenylether

9 27. The process of claim 25 where said resin is a cresol formaldehyde resin.

10 28. The process of claim 25 where said chemical is an acid precursor which on heating generates
11 acid.

12 29. A computer-to-press system, comprising:

- 13 a) a printing press;
- 14 b) an ink jet printhead containing an insolubilizing fluid; and
- 15 c) an on-press developable printing plate.

16 30. A computer-to-press system according to claim 29 wherein said insolubilizing fluid
17 comprises an amine.

18